Avocent Data Sheet

PM 1000/2000/3000 Power Distribution Units (PM PDUs)

Avocent Power Management

The Avocent PM PDUs include single-phase and three-phase models that support strip-level metering, outlet-level metering or outlet-level metering and switching. This advanced family of rack PDUs includes horizontal and vertical models for a variety of rack configurations in branch and remote offices.

The PM PDUs include an LED display and a built-in browser interface for local and remote access to real-time data. The metering features, along with the capability to set custom thresholds, allow companies to optimize their electrical infrastructure, without the risk of downtime due to overloaded circuits.

The PM 1000 PDUs enable companies of all sizes to accurately measure the current, voltage and power for the entire strip and the circuits within. The PM 2000 and PM 3000 PDUs take this a step further to support outlet-level metering and switching capability (PM 3000 PDUs only) to provide data center professionals the tools they need to monitor, measure, reduce and manage the growing power consumption costs of IT equipment.

All of these PDUs include advanced features that consist of a built-in network port for access to the browser interface, daisy chain ports for easy installation and expansion and support for external environmental sensors.

PDU Product Family	Metering Capability	Switching Capability	Environmental Sensor Support	Daisy Chain Capability	Main Interface Options	Management Options
PM 1000	Strip level	None	Yes	Yes	Serial* or IP	Stand alone or integrated with DSView 3 management software
PM 2000	Outlet level	None	Yes	Yes	Serial* or IP	Stand alone or integrated with DSView 3 management software
PM 3000	Outlet level	Outlet level	Yes	Yes	Serial* or IP	Stand alone or integrated with DSView 3 management software

**Note - The serial interface option allows the PDU to connect to a supported Avocent appliance and share the IP connection of the main appliance.*

Quick Facts

- Measure and monitor voltage, current, power (kW) and energy (kWh) consumption
- Create thresholds to generate alerts/notifications
- Remote switching capability to power on/off outlets (PM 3000 PDU models)
- Flexible installation - IP and serial interface options
- Chaining option allows multiple PDUs to share an IP or serial connection
- Supports external, environmental sensors for measuring temperature and humidity
- Onboard data log for individual PDU activity logs and historical data
- Can be managed directly or integrated with other Avocent solutions using the DSView® 3 management software
- Optional DSView 3 software Power Manager plug-in for historical reporting across multiple PDUs

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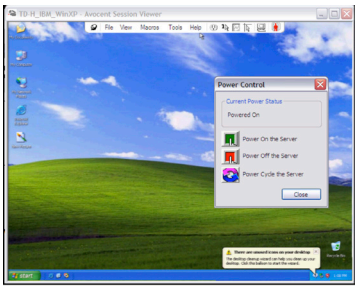
Avocent can help you answer questions like:

- Do you have sufficient tools in place in order to understand the details about your current, voltage and power?
- Do you know how much power each piece of equipment is consuming?
- Do you know your energy consumption costs?
- Do you have the capability to cycle the power to your local and remote servers?
- How do you limit who has permission to power cycle equipment, and how is that activity logged?
- Do you need to provide power to high amp equipment like blade servers and larger network switches?
- When you install new equipment, how do you ensure that you have power available?
- How can you prevent overdrawing your power circuits to prevent unnecessary downtime?
- Do you need to supply a network connection for each metered PDU?
- Are you looking for tools to help justify the purchase of new energy-efficient hardware?

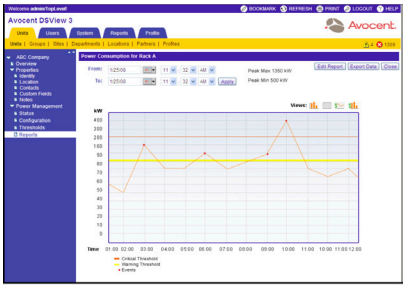
Alarms and monitoring

Thresholds can be created to allow data center teams to know before problems occur, minimizing downtime caused by overloaded circuits. The Avocent PM PDUs deliver accurate, real-time, current monitoring of all connected devices via the Web manager, DSView 3 software or locally through an LED digital display. Users can set a current alarm threshold that, once exceeded, will cause the PM PDU to sound an alarm, send a notification message or both.



Flexible management options

Avocent PDUs can be combined with an ACS 6000 advanced console server or MergePoint Unity® KVM over IP and serial console switch appliances to provide faster problem solving by integrating system access and power control in a single interface. Now you can see the remote devices and control their power using an integrated approach that allows you to actually see the remote device as it powers up or reboots. This integration provides instant feedback when critical issues are being resolved remotely.



DSView 3 management software integration

The DSView 3 software provides access and control to nearly all equipment found in today's data centers. The DSView 3 software Power Manager plug-in extends the capability of the DSView 3 software by giving companies the ability to monitor and measure IT energy consumption, costs and trends across all levels within their data centers and remote locations. With the PM PDUs, this information allows a professional to look at individual devices, a rack of equipment or a row of equipment and group items together to view overall consumptions, capacity and costs across many locations or just a single device.

Measure both power and energy consumption

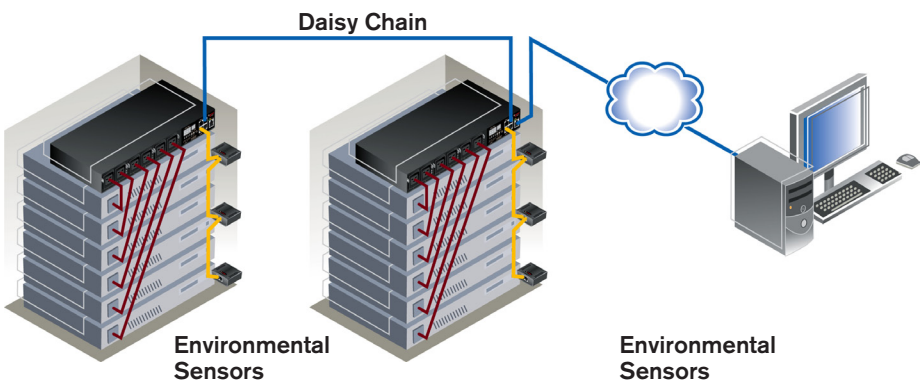
Many PDUs measure the available current at the strip level to ensure the integrity of power to the attached equipment. The PM PDUs also provide additional measurements in order to measure the energy consumption at the strip level (PM 1000 PDU models) or down to individual outlets (PM 2000 and PM 3000 PDU models). This energy measurement allows companies to implement chargeback policies, more accurately budget for expansion and measure the financial impacts of any changes.

Environmental sensor support

To get even more capabilities out of the PM PDUs, environmental sensors can be added to measure conditions at several locations within a rack. These sensors include chaining capabilities to enable a single PDU to support up to six sensors in order to measure temperature and humidity. Thresholds and alerts allow early detection to avoid downtime and equipment damage.

Features and benefits

- **Outlet-Level, Phase-Level and Strip-Level Metering with Threshold/Alert Capabilities** – Provides preemptive notification of any impending overload issues before they occur and simplifies the task of installing new equipment
  Note - measurement resolution +/- 5%
- **Capability to Remotely Switch Outlets Through Onboard Web Interface, DSView 3 Management Software** – Allows power to hung up IT equipment to be recycled, turned on or turned off remotely for faster resolution time (not available on PM 1000 or PM 2000 PDUs)
- **Onboard Web Interface** – Can be installed for direct access right out of the box or it can be configured as part of a larger integrated solution using the DSView 3 management software
- **IP and Serial Interface Options** – Options to install by connecting directly to the network or save IP connections by using the serial interface to connect directly to Avocent appliances already connected to the network
- **Daisy Chaining** – Saves the number of IP addresses or console/KVM ports that are required to manage all power distribution needs
- **Integration with DSView 3 Management Software** – Single interface for management of IT equipment and PDUs simplifies mapping of outlets to servers and other equipment in order to reduce and minimize power cycling the wrong equipment
- **Integration with DSView 3 Software Power Manager Plug-In** – Track historical trends to measure and monitor IT power consumption, capacity and cost in order to understand what issues exist and to make more informed decisions in the future
- **Electronic Overcurrent Protection (OCP)** – An added layer of protection that is activated in the event of minor overloads; during such events, outlets are turned off first instead of the primary OCP tripping
- **Sequential Startup** – Protects integrity of all upstream electrical infrastructure by staggering the inrush current draw of all plugged-in devices
- **Supports Environmental Sensors** – Chain up to six environmental sensors per PDU to measure and monitor temperature and humidity at several different points within the rack for notification of any impending environmental issues



Specifications

ENVIRONMENTAL SENSOR

Physical Dimensions (W x D x H)
3 x 3 x 1.5 in. (7.6 x 7.6 x 3.8 cm)

Temperature Sensor
Range: -45° to +115°C
Accuracy: 1°C

Humidity Sensor (PMHD-THS only)
Range: -0 - 100%
Accuracy: 2%

Daisy Chaining Capability
Up to 3 sensors per PDU sensor port

External Power Required
No

Cable Type
Standard CAT-5 Patch Cable

Maximum Cable Length
1200 ft. (between the PDU and the last sensor in the daisy chain)

PM 3000/2000/1000 PDU firmware compatibility
Version 1.3.0 and higher

HARWARE

Weight
3- and 6-outlet horizontal models:
27.3 lbs. without power cord
10-outlet horizontal models:
5.2 lbs. without power cord
24-outlet vertical models:
14.8 lbs. without power cord
20-outlet vertical models:
11 lbs. without power cord

Physical Dimensions (W x D x H)
3- and 6-outlet horizontal models:
17 x 8.272 x 1.719 in. (43.2 x 21 x 4.4 cm)
10-outlet horizontal models:
17 x 5.5 x 1.7 in. (43.2 x 14 x 4.3 cm)
24-outlet vertical models:
2.2 x 3.15 x 66 in. (5.6 x 8 x 167.6 cm)
20-outlet vertical models:
2.2 x 3.2 x 52 in. (5.6 x 8.1 x 132.1 cm)
Note: PM 1000 PDU height is 46 in. (116.8 cm)

Environmental
Operating Temperature: 50° to 113°F (10° to 45°C)
Storage Temperature: -40° to 149°F (-40° to 65°C)

Network Connection
Number: 1
Type: 10/100/1000 Ethernet

External Sensor Connections:
Number: 2
Type: RJ-45

Accessories Included
Rack-mount kit, toolless-mounting hardware with vertical models and outlet retention clips

Warranty
Two Years

Communications options supported
Browser, CLI, SNMP, Serial or IP (using DSView 3 software or supported Avocent appliances)

Standards
Approved Agency: UL, FCC, cUL, CE, VCCI, C-Tick, CB

ORDERING DETAILS

PM 1000 PART NUMBER	PM 2000 PART NUMBER	PM 3000 PART NUMBER	NUMBER OF OUTLETS	TYPE OF OUTLETS	RATED AMPS	MAXIMUM CONTINUOUS AMPS**	INPUT VOLTAGE	INPUT POWER CORD TYPE
North America – Horizontal Models								
	PM2001H-401	PM3001H-401	3	IEC C19	30A	24A	1-PH 208V	L6-30P
	PM2002H-401	PM3002H-401	6	IEC C19	30A	24A	3-PH 208V	L15-30P
	PM2005H-403	PM3005H-403	6	IEC C19	50A	40A	3-PH 208V	HUBBELL CS8365C
	PM2005H-404	PM3005H-404	6	IEC C19	60A	48A	3-PH 208V	IEC309
	PM2006H-401	PM3006H-401	6	IEC C19	30A	24A	3-PH 208V	L21-30P
PM1009H-401	PM2007H-401	PM3007H-401	10	IEC C13	30A	24A	1-PH 200-240V	L6-30P
PM1011H-xxx*	PM2009H-xxx*	PM3009H-xxx*	10	IEC C13	20A	16A	1-PH 100-240V	Detachable cord with IEC 320-C20 inlet
North America – Vertical Models								
PM1001V-401	PM2001V-401	PM3001V-401	24	(21) C13 and (3) C19 outlets	30A	24A	1-PH 208V	L6-30P
PM1008V-401	PM2002V-401	PM3002V-401	24	(21) C13 and (3) C19 outlets	30A	24A	3-PH 208V	L15-30P
PM1003V-401	PM2005V-403	PM3005V-403	24	(21) C13 and (3) C19 outlets	50A	40A	3-PH 208V	HUBBELL CS8365C
PM1004V-401	PM2005V-404	PM3005V-404	24	(21) C13 and (3) C19 outlets	60A	48A	3-PH 208V	IEC309
PM1002V-401	PM2006V-401	PM3006V-401	24	(21) C13 and (3) C19 outlets	30A	24A	3-PH 208V	L21-30P
PM1012V-401	PM2010V-401	PM3010V-401	20	IEC C13	30A	24A	1-PH 200-240V	L6-30P
PM1014V-xxx*	PM2012V-xxx*	PM3012V-xxx*	20	IEC C13	20A	16A	1-PH 100-240V	Detachable cord with IEC 320-C20 inlet
International – Horizontal Models								
	PM2003H-401	PM3003H-401	3	IEC C19	32A	32A	1-PH 220/230/240V	IEC309
	PM2004H-401	PM3004H-401	6	IEC C19	16A	16A	3-PH 380/400/415V	IEC309
	PM2005H-406	PM3005H-406	6	IEC C19	32A	32A	3-PH 380/400/415V	IEC309
PM1010H-401	PM2008H-401	PM3008H-401	10	IEC C13	32A	32A	1-PH 220/230/240V	IEC309
PM1011H-xxx*	PM2009H-xxx*	PM3009H-xxx*	10	IEC C13	16A	16A	1-PH 100-240V	Detachable cord with IEC 320-C20 inlet
International – Vertical Models								
PM1005V-401	PM2003V-401	PM3003V-401	24	(21) C13 and (3) C19 outlets	32A	32A	1-PH 220/230/240V	IEC309
PM1006V-401	PM2004V-401	PM3004V-401	24	(21) C13 and (3) C19 outlets	16A	16A	3-PH 380/400/415V	IEC309
PM1007V-401	PM2005V-406	PM3005V-406	24	(21) C13 and (3) C19 outlets	32A	32A	3-PH 380/400/415V	IEC309
PM1013V-401	PM2011V-401	PM3011V-401	20	IEC C13	32A	32A	1-PH 220/230/240V	IEC309
PM1014V-xxx*	PM2012V-xxx*	PM3012V-xxx*	20	IEC C13	16A	16A	1-PH 100-240V	Detachable cord with IEC 320-C20 inlet

** Note- Actual part numbers for these models include a specific country code. Please review the chart below for the list of available options.*
*** Note-Maximum Continuous amps shown for North American models are derated 20% for North American safety codes.*

COUNTRY CODE/POWER CORD OPTIONS (FOR MODELS WITH DETACHABLE POWER CORDS)

PART NUMBER SUFFIX	POWER CORD TYPE	COUNTRY SOLD
-001	L6-20P	US, Americas
-101	L6-20P	Taiwan, Thailand
-105	L6-20P	Japan
-102	BS1363	Singapore, Malaysia, Hong Kong
-201	BS1363	Ireland, UK
-103	GB1002/2099	China
-202	CEE 7/7 VDE	Continental Europe
-104	CEE 7/7 EK	S. Korea

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